

B. AMENDMENTS TO THE CLAIMS

1 1. (previously withdrawn) An elongate bat having a longitudinal axis
2 comprising:

3 an elongate one-piece tubular striking member having a first length, a distal
4 end, a proximal end, a striking region intermediate said distal and proximal ends, and a
5 first juncture section adjacent said proximal end converging toward said axis on
6 progressing toward said proximal end, said striking member having a first effective mass;
7 and

8 an elongate one-piece handle member shorter than said first length composed
9 of a material having a second effective mass which is different from said first effective
10 mass, said handle member having a distal end, a second juncture section adjacent the distal
11 end of the handle member, a proximal end, and a gripping portion between the second
12 juncture section and the proximal end of the handle member, the second juncture section
13 having an outer diameter that is greater than the outer diameter of the gripping portion, the
14 second juncture section being firmly joined to the first juncture section of said striking
15 member, such that at least a portion of the first juncture section directly contacts at least a
16 portion of the second juncture section, to provide a rigid interconnection there between to
17 permit substantially complete striking energy transfer between said handle member and said
18 striking member.

1 2. (previously withdrawn) The bat of claim 1, wherein the effective mass of
2 the handle member is less than the effective mass of the striking member.

1 3. (previously withdrawn) The bat of claim 1, wherein said first juncture
2 section has a length no greater than 25% of said first length.

1 4. (previously withdrawn) The bat of claim 1, wherein the second juncture
2 section diverges from said axis on progressing toward said distal end, with a configuration

3 substantially complementary to the converging portion of the first juncture section of the
4 striking member, and portions of said first and second juncture sections rest in mating
5 contact.

1 5. (previously withdrawn) The bat of claim 4, wherein said first and second
2 juncture sections are substantially frusto-conical, each having a major diameter section and
3 a minor diameter portion, with the major diameter portion of the second juncture section of
4 the handle member being greater than a minor diameter portion of the first juncture section
5 of the striking member.

1 6. (previously withdrawn) The bat of claim 5, wherein said striking region of
2 said striking member has a first diameter, wherein the outside diameter of the gripping
3 portion of the handle member is less than said first diameter, and wherein said second
4 juncture section of said handle member is captured in said first juncture section of said
5 striking member.

1 7. (previously withdrawn) The bat of claim 5, which further comprises
2 adhesive material interposed between said first and second juncture sections whereby said
3 first and second juncture sections are adhesively joined.

1 8. (previously withdrawn) The bat of claim 5, wherein at least one of an outer
2 surface of the second juncture section of the handle member and an inner surface of the
3 first juncture section of the striking member has a plurality of projections which extend
4 radially a predetermined distance.

1 9. (previously withdrawn) The bat of claim 8, wherein the predetermined
2 distance is in a range of 0.001 to 0.010 inches.

1 10. (previously withdrawn) The bat of claim 8, wherein the outer surface of the
2 second juncture section of the handle member, the inner surface of the first juncture section
3 of the striking member and the projections define at least one space, and wherein an

4 adhesive at least partially fills the at least one space to join the handle and striking
5 members.

1 11. (previously withdrawn) The bat of claim 8, wherein the predetermined
2 distance is equal to the thickness of a desired layer of an adhesive for joining the handle
3 and striking members.

1 12. (previously withdrawn) The bat of claim 8, wherein the predetermined
2 distance is in a range of 0.002 to 0.005 inches.

1 13. (previously withdrawn) The bat of claim 8, wherein a projection has a width
2 in a range of 0.125 to 0.75 inches.

1 14. (previously withdrawn) The bat of claim 8, wherein a projection has a width
2 in a range of 0.2 to 0.3 inches.

1 15. (previously withdrawn) The bat of claim 8, wherein said projections
2 comprise elongate ribs extending substantially longitudinally of said bat.

1 16. (previously withdrawn) The bat of claim 8, wherein said projections are
2 helical.

1 17. (previously withdrawn) The bat of claim 8, wherein said projections are on
2 said handle member and outer surfaces of said projections firmly contact the inner surface
3 of said first juncture section of the striking member.

1 18. (previously withdrawn) The bat of claim 1, wherein the striking member is
2 formed from a material selected from the group consisting of a metal, wood, a fiber
3 composite material, and a non-metallic material.

1 19. (previously withdrawn) The bat of claim 1, wherein the striking member is
2 composed of metal having a first specific gravity and the handle member is composed of

3 composite material having a second specific gravity which is different from said first
4 specific gravity.

1 20. (previously withdrawn) The bat of claim 19, wherein the specific gravity of
2 the handle member is less than the specific gravity of the striking member.

1 21. (previously withdrawn) The bat of claim 1, wherein the handle member is
2 formed from a material selected from the group consisting of a metal, wood, a fiber
3 composite material and a non-metallic material

1 22. (previously withdrawn) The bat of claim 21, wherein said composite
2 comprises a fiber composite material.

1 23. (previously withdrawn) The bat of claim 22, wherein said fiber composite
2 material comprises carbon fibers in an epoxy matrix.

1 24. (previously withdrawn) The bat of claim 22, wherein the fiber composite
2 material comprises a chopped fiber slurry.

1 25. (previously withdrawn) The bat of claim 1, wherein the handle member is
2 formed of a fiber composite material comprising a plurality of tubular layers, wherein each
3 layer comprises a matrix including structural fibers supported by the matrix, and wherein
4 the plurality of tubular layers includes fiber layer configurations selected from the group
5 consisting of a layer of longitudinally extending fibers, a layer of circumferentially
6 extending fibers, a layer of helically extending fibers, a layer of braided fibers, and
7 combinations thereof.

1 26. (previously withdrawn) An elongate bat having a longitudinal axis
2 comprising:

3 an elongate one-piece tubular striking member having a first length, a distal
4 end, a proximal end, a striking region intermediate said distal and proximal ends, and a

5 first juncture section adjacent said proximal end converging toward said axis on
6 progressing toward said proximal end, said striking member having a first effective mass;
7 and

8 an elongate one-piece handle member shorter than said first length composed
9 of a material having a second effective mass which is different from said first effective
10 mass, said handle member having a distal end, a second juncture section adjacent the distal
11 end of the handle member, a proximal end, and a gripping portion between the second
12 juncture section and the proximal end of the handle member, the second juncture section
13 having an outer diameter that is greater than the outer diameter of the gripping portion, the
14 second juncture section being firmly joined to the first juncture section of said striking
15 member, such that at least a portion of the first juncture section directly contacts at least a
16 portion of the second juncture section, to provide a rigid interconnection there between to
17 permit substantially complete striking energy transfer between said handle member and said
18 striking member, the striking member being formed of a fiber composite material
19 comprising a plurality of tubular layers, each layer comprises a matrix including structural
20 fibers supported by the matrix, the plurality of tubular layers including fiber layer
21 configurations selected from the group consisting of a layer of longitudinally extending
22 fibers, a layer of circumferentially extending fibers, a layer of helically extending fibers, a
23 layer of braided fibers, and combinations thereof, and the length of the second juncture
24 section, which is overlapped by the first juncture section, being less than thirty percent of
25 the total length of the handle member.

1 27. (previously withdrawn) The bat of claim 1, further comprising a weighted
2 plug coupled to the proximal end of the handle member, and wherein the length of the
3 second juncture section, which is overlapped by the first juncture section, is less than thirty
4 percent of the total length of the handle member.

1 28. (previously withdrawn) The bat of claim 27 wherein the weighted plug
2 weighs in the range of 0.5 to 7 ounces.

1 29. (previously withdrawn) The bat of claim 27 wherein the weighted plug
2 weighs in the range of 2 to 5 ounces.

1 30. (previously withdrawn) The bat of claim 27 wherein the weighted plug has
2 a length in the range of 1.0 to 4.0 inches.

1 31. (previously withdrawn) The bat of claim 1, which further comprises a
2 second tubular member concentric with the striking region of the striking member, and
3 wherein the length of the second juncture section, which is overlapped by the first juncture
4 section, is less than thirty percent of the total length of the handle member.

1 32. (previously withdrawn) The bat of claim 31, wherein said striking member
2 has a hollow circular cross section and a said second tubular member comprises an insert
3 having a circular cross section positioned within the striking region of said striking
4 member.

1 33. (previously withdrawn) The bat of claim 32, wherein said distal end of said
2 handle section is received in the first juncture section of said striking member and the
3 second tubular member has an end facing said handle section which is spaced a distance
4 from said handle section.

1 34. (previously withdrawn) A bat comprising:
2 an elongate tubular striking member having a distal end, a proximal end, and
3 a first juncture section adjacent said proximal end and having an inner surface;
4 an elongate one-piece tubular handle member of a composite material having
5 a distal end, a proximal end, and a second juncture section adjacent said distal end of the
6 handle member, the second juncture section having an outer surface, said first and second
7 juncture sections being positioned contiguous each other and firmly joined, such that at
8 least a first portion of the handle member directly contacts at least a first portion of the
9 striking member, to provide a rigid interconnection therebetween to permit substantially

complete striking energy transfer between said handle member and said striking member;
and

an adhesive positioned between the first and second juncture sections and
connecting at least a second portion of the striking member to at least a second portion of
the handle member.

35. (previously withdrawn) The bat of claim 34, which has a longitudinal axis,
said first juncture section converges toward said axis on progressing toward said proximal
end of said striking member, and said second juncture section diverges from said axis on
progressing toward said distal end of the handle member, with said second juncture section
having a configuration substantially complementary to the converging portion of the first
juncture section of the striking member, and said first and second juncture sections rest in
mating contact.

36. (previously withdrawn) The bat of claim 35, wherein said first and second
juncture sections are substantially frusto-conical, each having a major diameter portion and
a minor diameter portion, with the major diameter portion of the second juncture section of
the handle member being greater than the minor diameter portion of the first juncture
section of the striking member.

37. (previously withdrawn) The bat of claim 34, wherein said striking member
has a striking region of a first diameter, said handle member has a gripping portion
positioned toward its proximal end from second juncture section, the gripping portion
having a second diameter which is less than said first diameter, and said handle member
extends through the proximal end of said striking member with said second juncture section
of said handle member captured in said first juncture section of said striking member.

38. (previously withdrawn) The bat of claim 34, wherein an outer surface of
said juncture section of the handle member is disposed within the confines of an inner

3 surface of the juncture section of the striking member and adhesive material is disposed
4 between said inner and outer surfaces to join said handle and striking members.

1 39. (previously withdrawn) The bat of claim 34, wherein at least one of the
2 outer surface of the second juncture section of the handle member and the inner surface of
3 the first juncture section of the striking member has a plurality of projections which extend
4 radially a predetermined distance.

1 40. (previously withdrawn) The bat of claim 39, wherein the predetermined
2 distance is in a range of 0.001 to 0.010 inches.

1 41. (previously withdrawn) The bat of claim 39, wherein the predetermined
2 distance is in a range of 0.002 to 0.005 inches.

1 42. (previously withdrawn) The bat of claim 34, wherein the outer surface of
2 the second juncture section of the handle member, the inner surface of the first juncture
3 section of the striking member and the projections define at least one space, and wherein
4 the adhesive at least partially fills the at least one space to join the handle and striking
5 members.

1 43. (previously withdrawn) The bat of claim 39, wherein the predetermined
2 distance is equal to the thickness of a desired layer of the adhesive for joining the handle
3 and striking members.

1 44. (previously withdrawn) The bat of claim 34, wherein said composite
2 comprises a fiber composite material.

1 45. (previously withdrawn) The bat of claim 34, wherein the striking member is
2 formed from a material selected from the group consisting of a metal, wood, a fiber
3 composite material, and a non-metallic material.

1 46. (previously withdrawn) The bat of claim 44, wherein the fiber composite
2 material comprises a chopped fiber slurry.

1 47. (previously withdrawn) The bat of claim 34, wherein the handle member is
2 formed of a fiber composite material comprising a plurality of tubular layers, wherein each
3 layer comprises a matrix including structural fibers supported by the matrix, and wherein
4 the plurality of tubular layers includes fiber layer configurations selected from the group
5 consisting of a layer of longitudinally extending fibers, a layer of circumferentially
6 extending fibers, a layer of helically extending fibers, a layer of braided fibers, and
7 combinations thereof.

1 48. (previously withdrawn) The bat of claim 34, wherein the handle member
2 comprises plural tubular layers, each layer comprising a matrix and structural fibers
3 supported by the matrix, with at least one of the layers comprising fibers that extend
4 substantially circumferentially and multiple layers comprising fibers that extend
5 substantially longitudinally, wherein the number of longitudinal layers is greater than the
6 number of circumferential layers.

1 49. (previously withdrawn) A bat comprising;
2 an elongate tubular striking member having a distal end, a proximal end, a
3 first juncture section adjacent said proximal end; and
4 an elongate tubular handle member having a distal end, a proximal end, and
5 a second juncture section adjacent said distal end of the handle member, the handle member
6 including plural layers of fiber composite material, with selected layers extending the full
7 length of the handle member, and other layers extending over only a selected portion of the
8 length of the handle member less than its full length, said first and second juncture sections
9 being positioned contiguous each other and firmly joined together to provide a rigid inter
10 connection therebetween, such that at least a portion of the striking member directly
11 contacts at least a portion of the handle member, to permit substantially complete striking

12 energy transfer between said handle member and said striking member, said striking
13 member comprising material formed to have appropriate strength in a given direction to
14 successfully withstand the impact of a batted object and said handle member comprising
15 material formed with appropriate configuration to produce selected resistance to bending
16 along its longitudinal axis to produce desired bat swing characteristics.

1 50. (previously withdrawn) The bat of claim 49, wherein each of the plural
2 layers of fiber composite material include a matrix and structural fiber supported by the
3 matrix, with the majority of the fibers extending at an angle less than about 50° relative to
4 the longitudinal axis of the handle member layers.

1 51. (previously cancelled) The bat of claim 49, wherein the striking member is
2 formed metal and the handle member is formed of composite material.

1 52. (previously withdrawn) The bat of claim 49, wherein the handle member
2 comprises plural layers of fiber composite material, with selected layers extending the full
3 length of the handle member, and other layers extending over only a selected portion of the
4 length of the handle member less than its full length.

1 53. (previously withdrawn) The bat of claim 49, wherein said selected layers
2 less than the full length of the handle member are placed at different positions along the
3 length of the handle member.

1 54. (previously withdrawn) The bat of claim 49, wherein selected layers are
2 formed in a variety of shapes and are laid up in selected positions along the length of the
3 handle member to produce selected strength and stiffness characteristics for the handle
4 member.

1 55. (previously withdrawn) The bat of claim 52, wherein the handle member
2 comprises plural layers of fiber composite material, with selected ones of the layers being
3 composed of fiber material different from fiber material in others of the selected layers.

1 56. (previously withdrawn) The bat of claim 55, wherein the selected layers are
2 composed of fibers chosen from a group including carbon fibers, boron fibers, fiberglass,
3 metallic fibers, and combinations thereof.

1 57. (previously withdrawn) The bat of claim 49, which further comprises a
2 weighted element secured to the proximal end of said handle member, and wherein the
3 length of the second juncture section, which is overlapped by the first juncture section, is
4 less than thirty percent of the total length of the handle member.

1 58. (currently amended) A method for constructing an elongate bat having a
2 longitudinal axis comprising the steps of:

3 forming an one-piece elongate tubular striking member having a circular
4 cross section with a proximal end, a distal end, a striking region therebetween, and a
5 juncture section adjacent said proximal end converging toward said axis on progressing
6 toward said proximal end to form a mouth of a first diameter,

7 forming an elongate one-piece handle member of composite material
8 having a circular cross section having a proximal end, a distal end and a juncture
9 section adjacent said distal end which diverges from said axis on progressing toward
10 said distal end to a second diameter greater than said first diameter,

11 assembling the striking member and handle member by inserting the
12 handle member into the striking member with at least a portion of the outer surface of
13 the juncture section of the handle member engaging a portion of the inner surface of the
14 juncture section of the striking member, and remainder portions of said handle member
15 extending longitudinally from said proximal end of the striking member, and

16 joining the juncture section of the handle member to the juncture section
17 of the striking member to provide a rigid interconnection between the striking member
18 and the handle member.

1 59. (original) The method of claim 58, wherein in said joining step adhesive
2 is applied between said juncture sections and cured.

1 60. (original) The method of claim 58, wherein said striking member is
2 formed of a material having a first specific gravity and said handle member is formed
3 of a composite material having a second specific gravity different from said first
4 specific gravity.

1 61. (original) The method of claim 58, wherein the diverging portion of the
2 juncture section of the handle member is formed in a configuration complementary to
3 the converging portion of the juncture section of the striking member.

1 62. (original) The method of claim 58, wherein the step of forming the
2 handle member comprises positioning plural composite layers adjacent each other to
3 form a tubular member, and curing said layers.

1 63. (original) The method of claim 62, wherein the step of forming the
2 handle member comprises the steps of positioning plural composite layers containing
3 structural fibers therein adjacent each other such that each layer is tubular, and
4 orienting the layers such that the majority of the layers have fibers extending at an
5 angle less than about 50° relative to the longitudinal axis of the handle member.

1 64. (previously canceled) The method of claim 62, wherein at least one molding
2 member is impressed against the outside of said tubular member during forming to produce
3 spaced apart projections on said juncture section of the handle member with said
4 projections extending outwardly from remainder portions of said tubular member.

1 65. (previously canceled) The method of claim 64, wherein said molding
2 member is removed following curing.

1 66. (previously canceled) The method of claim 64, wherein said projections
2 are formed as elongate ribs extending substantially longitudinally of said handle
3 member.

1 67. (previously canceled) The method of claim 64, wherein said ribs are
2 positioned to engage the inner surface of said juncture section of the striking member
3 when assembled.

1 68. (previously canceled) The method of claim 64, wherein said molding
2 member produces projections in a range of 0.002 to 0.005 inch in height.

1 69. (original) A method for constructing an elongate bat having a
2 longitudinal axis comprising the steps of
3 forming an elongate one-piece tubular striking member having a circular
4 cross section with a proximal end, a distal end, a striking region therebetween and a
5 first juncture section adjacent said proximal end, the first juncture section covering
6 toward the axis toward the proximal end of the striking member;

7 forming an elongate one-piece handle member of composite material
8 having a circular cross section having a proximal end, distal end and a second juncture
9 section adjacent said distal end, the second juncture section diverging from the axis on
10 progressing toward the distal end of the handle member, wherein the step of forming
11 the handle member comprises positioning plural composite layers adjacent each other to
12 form a tubular member and curing said layers,

13 assembling the striking member and handle member with at least a
14 portion of the outer surface of the second juncture section of the handle member
15 engaging a portion of the inner surface of the first juncture section of the striking
16 member, and

17 joining the second juncture section of the handle member to the first
18 juncture section of the striking member to provide a rigid inter connection
19 therebetween.

1 70. (original) The method of claim 69, wherein in the step of forming the
2 handle member, selected numbers and orientation of composite layers are applied.

1 71. (original) The method of claim 70, wherein the handle member has a
2 selected overall length, selected ones of said composite layers have a length

3 substantially equal to said overall length, and others of said composite layers have a
4 length shorter than said overall length.

1 72. (original) The method of claim 71, wherein composite layers which are
2 shorter than said overall length are positioned at varying positions intermediate the
3 proximal and distal ends of said handle member.

1 73. (original) The method of claim 70, wherein the composite layers each
2 comprise a matrix including structural fibers supported by the matrix, and wherein the
3 layers are selected from a group of fiber layer configurations consisting of a layer of
4 longitudinally extending fibers, a layer of circumferentially extending fibers, a layer of
5 helically extending fibers, a layer of braided fibers, and combinations thereof.

1 74. (previously withdrawn) A bat for striking a ball, the bat comprising:
2 an elongate tubular striking member extending along a longitudinal axis and
3 having a distal end, and a proximal end, the striking member including a first juncture
4 section integrally formed with the striking member and positioned adjacent the proximal
5 end of the striking member, the striking member being formed of a first material; and
6 an elongate tubular handle member extending along the longitudinal axis and
7 having a distal end and a proximal end, the handle member including a second juncture
8 section integrally formed with the handle member and positioned adjacent the distal end of
9 the handle member, the handle member coupled to the striking member such that at least a
10 portion of the first juncture section firmly and directly contacts at least a portion of the
11 second juncture section, the handle member having a resistance to bending along the
12 longitudinal axis in the range of 200-1980 lbs/in a three-point bend stiffness test wherein
13 the handle member is transversely supported in first direction by a pair of supports spaced
14 apart a selected distance, with the first support adjacent the distal end and a second support
15 adjacent the proximal end, and is transversely loaded in a second direction, opposite the
16 first direction, at a location on the handle member in a region between 30% and 40% of
17 said selected distance from the distal end of the handle member.

1 75. (previously withdrawn) The bat of claim 74, wherein the handle member
2 has a resistance to bending along the longitudinal axis in the range of 400-900 lbs/in.

1 76. (previously withdrawn) The bat of claim 74, wherein the handle member
2 has a length in the range of 9 to 22 inches, and wherein the handle member has a weight in
3 the range of 3 to 8 ounces.

1 77. (previously withdrawn) The bat of claim 76, wherein the handle member
2 has a weight in the range of 5 to 7 ounces.

1 78. (previously withdrawn) The bat of claim 74, wherein the striking member is
2 formed from a material selected from the group consisting of a metal, wood, a ceramic,
3 and a fiber composite material.

1 79. (previously withdrawn) The bat of claim 74, wherein the handle member is
2 formed of a fiber composite material comprising a plurality of tubular layers, wherein each
3 layer comprises a matrix including structural fibers supported by the matrix, and wherein
4 the plurality of tubular layers includes fiber layer configurations selected from the group
5 consisting of a layer of longitudinally extending fibers, a layer of circumferentially
6 extending fibers, a layer of helically extending fibers, a layer of braided fibers, and
7 combinations thereof.

1 80. (previously withdrawn) The bat of claim 79, wherein the helically extending
2 fibers of the at least one layer of helically extending fibers extend along the handle member
3 at an angle that is between +/- 1 to 89 degrees from the longitudinal axis.

1 81. (previously withdrawn) The bat of claim 79, wherein the handle member
2 includes a proximal gripping portion and a distal tapered portion, wherein one of the
3 proximal gripping portion and the distal tapered portion is formed with a larger number of
4 layers than the remaining portion.

1 82. (previously withdrawn) The bat of claim 74, wherein the composite material
2 of the handle member comprises a chopped fiber slurry.

1 83. (previously withdrawn) The bat of claim 74, further comprising a weighted
2 plug coupled to the proximal end of the handle member, and wherein the length of the
3 second juncture section, which is overlapped by the first juncture section, is less than thirty
4 percent of the total length of the handle member.

1 84. (previously withdrawn) The bat of claim 83, wherein the weighted plug
2 weighs in the range of 2 to 5 ounces.

1 85. (previously withdrawn) The bat of claim 83, wherein the weighted plug has
2 a length in the range of 1.0 to 4.0 inches.

1 86. (previously withdrawn) The bat of claim 79, wherein the fibers are formed
2 of a material selected from the group consisting of glass, fiberglass, carbon, boron, metal
3 and combinations thereof.

1 87. (previously withdrawn) The bat of claim 79, wherein the fibers have an area
2 fiber density within the range of 0.0143 and 0.048 grams/cm².

1 88. (previously withdrawn) The bat of claim 74, wherein the first material has a
2 greater impact resistance to ball strikes than the composite material of the handle member.

1 89. (previously withdrawn) The bat of claim 74, wherein at least one of an
2 outer surface of the juncture section of the handle member and an inner surface of the
3 juncture section of the striking member has a plurality of projections which extend radially
4 a predetermined distance.

1 90. (previously withdrawn) A bat for striking a ball, the bat comprising:

2 an elongate tubular striking member extending along a longitudinal axis and
3 having a distal end, a proximal end, and a first juncture section adjacent the proximal end
4 of the striking member, the striking member being formed of a first material; and

5 a one-piece elongate tubular handle member extending along the longitudinal
6 axis and having a distal end, a proximal end and a second juncture section adjacent the
7 distal end of the handle, the handle member coupled to the striking member such that at
8 least a portion of the first juncture section firmly and directly contacts at least a portion of
9 the second juncture section;

10 the bat having a resistance to bending along the longitudinal axis in the range
11 of 500 to 2100 lbs/in a three-point bend stiffness test wherein the bat is transversely
12 supported in a first direction at a first location 6 inches from the distal end of the striking
13 member and a second location 6 inches from the proximal end of the handle member, and
14 is transversely loaded in a second direction, opposite the first direction, at a third location
15 at mid-length position on the bat.

1 91. (previously withdrawn) The bat of claim 90, wherein the bat has a
2 resistance to bending along the longitudinal axis in the range of 500-1500 lbs/in.

1 92. (previously withdrawn) The bat of claim 90, wherein the handle member
2 has a length in the range of 9 to 22 inches, and wherein the handle member has a weight in
3 the range of 3 to 8 ounces.

1 93. (previously withdrawn) The bat of claim 90, wherein the handle member
2 has a weight in the range of 5 to 7 ounces.

1 94. (previously withdrawn) The bat of claim 90, wherein the striking member is
2 formed from material selected from the group consisting of a metal, wood, a ceramic, and
3 a fiber composite material.

1 95. (previously withdrawn) The bat of claim 90, wherein the handle member is
2 formed of a fiber composite material comprising a plurality of tubular layers, wherein each
3 layer comprises a matrix including structural fibers supported by the matrix, and wherein
4 the plurality of tubular layers includes fiber layer configurations selected from the group
5 consisting of a layer of longitudinally extending fibers, a layer of circumferentially
6 extending fibers, a layer of helically extending fibers, a layer of braided fibers, and
7 combinations thereof.

1 96. (previously withdrawn) The bat of claim 95, wherein the handle member
2 includes a proximal gripping portion and a distal tapered portion, wherein one of the
3 proximal gripping portion and the distal tapered portion is formed with a larger number of
4 layers than the remaining portion.

1 97. (previously withdrawn) The bat of claim 90, wherein the composite material
2 of the handle member comprises a chopped fiber slurry.

1 98. (previously withdrawn) The bat of claim 90, further comprising a weighted
2 plug coupled to the proximal end of the handle member, and wherein the length of the
3 second juncture section, which is overlapped by the first juncture section, is less than thirty
4 percent of the total length of the handle member.

1 99. (previously withdrawn) The bat of claim 98, wherein the weighted plug
2 weighs in the range of 2 to 5 ounces.

1 100. (previously withdrawn) The bat of claim 98, wherein the weighted plug has
2 a length in the range of 1.0 to 4.0 inches.

1 101. (previously withdrawn) The bat of claim 95, wherein the fibers have an area
2 fiber density within the range of 0.0143 and 0.048 grams/cm².

1 102. (previously withdrawn) The bat of claim 90, wherein the first material has a
2 greater impact resistance to ball strikes than the composite material of the handle member.

1 103. (previously withdrawn) The bat of claim 90, wherein at least one of an
2 outer surface of the juncture section of the handle member and an inner surface of the
3 juncture section of the striking member has a plurality of projections which extend radially
4 a predetermined distance.

1 104. (previously canceled) The method of claim 64, wherein in said joining step
2 adhesive is applied between said juncture sections and cured.

1 105. (previously canceled) The method of claim 64, wherein said striking
2 member is formed of a material having a first specific gravity and said handle member is
3 formed of a composite material having a second specific gravity different from said first
4 specific gravity.

1 106. (previously canceled) The method of claim 64, wherein the diverging
2 portion of the juncture section of the handle member is formed in a configuration
3 complementary to the converging portion of the juncture section of the striking member.

1 107. (previously canceled) The method of claim 64, wherein the step of forming
2 the handle member comprises the steps of positioning plural composite layers containing
3 structural fibers therein adjacent each other such that each layer is tubular, and orienting
4 the layers such that the majority of the layers have fibers extending at an angle less than
5 about 50° relative to the longitudinal axis of the handle member.

1 108. (original) A method for constructing a bat having a longitudinal axis
2 comprising the steps of:

3 forming an elongate one-piece tubular striking member having a
4 proximal end, a distal end, a striking region therebetween, and a first juncture section

5 adjacent the proximal end of the striking member converging toward the axis on
6 progressing toward the proximal end, the proximal end having a first inner diameter;
7 forming an elongate one-piece handle member of composite material
8 having a first length, a proximal end, a distal end and a second juncture section adjacent
9 the distal end of the handle member, the handle member diverging from the axis on
10 progressing toward the distal end to a second outer diameter that is greater than the first
11 inner diameter, the second juncture section having a second length that is less than
12 thirty percent of the first length;
13 assembling the striking member and the handle member by inserting the
14 handle member into the striking member with the outer surface of the second juncture
15 section of the handle member being overlapped by the inner surface of the first juncture
16 section of the striking member; and
17 joining the striking member to the handle member, such that at least a
18 first portion of the first juncture section directly contacts at least a first portion of the
19 second juncture section, to provide a rigid interconnection between the striking member
20 and the handle member.

1 109. (original) The method of claim 108, wherein, in the joining step,
2 adhesive is applied between the first and second juncture sections and cured, whereby
3 at least a second portion of the first juncture section is adhesively joined to at least a
4 second portion of the second juncture section.

1 110. (original) The method of claim 108, wherein the striking member is
2 formed of a material having a first specific gravity and the handle member is formed of
3 a composite material having a second specific gravity different from the first specific
4 gravity.

1 111. (original) The method of claim 108, wherein the second juncture section
2 of the handle member is formed in a configuration complementary to the first juncture
3 section of the striking member.

1 112. (original) The method of claim 108, wherein the step of forming the
2 handle member comprises positioning plural composite layers adjacent each other to
3 form a tubular member, and curing the layers.

1 113. (original) The method of claim 112, wherein the step of forming the
2 handle member comprises the steps of positioning plural composite layers containing
3 structural fibers therein adjacent each other such that each layer is tubular, and
4 orienting the layers such that the majority of the layers have fibers extending at an
5 angle less than about 50° relative to the longitudinal axis of the handle member.

1 114. (canceled) The method of claim 108, wherein at least one molding member
2 is impressed against one of the inner surface of the first juncture section and the outer
3 surface of the second juncture section during forming to produce spaced apart projections
4 on at least one of the first and second juncture sections.

1 115. (canceled) The method of claim 114, wherein the projections are formed
2 as elongate ribs extending substantially longitudinally along at least one of the first and
3 second juncture sections.

1 116. (canceled) The method of claim 115, wherein the ribs are positioned
2 such that at least a portion of the ribs provide the direct contact between the first and
3 second juncture sections.

1 117. (canceled) The method of claim 114, wherein the molding member produces
2 projections in a range of 0.002 to 0.005 inch in height.

1 118. (original) The method of claim 108, wherein the striking member is formed
2 from a material selected from the group consisting of a metal, wood, a fiber reinforced
3 composite material, and a non-metallic material.

1 119 (original) The method of claim 108, further comprising the step of inserting
2 a weighed plug into the proximal end of the handle member, and coupling the weighted
3 plug to the handle member.

1 120 (original) The method of claim 119, wherein the weighted plug weighs in
2 the range of 0.5 to 7 ounces, and has a length in the range of 1.0 to 4.0 inches..

1 121 (original) The method of claim 108, further comprising the step of
2 inserting a tubular insert within the striking member, such that the tubular insert can
3 move independently of the striking member upon impact with a ball.

1 122. (canceled) A method for constructing a bat comprising the steps of
2 forming an elongate cylindrical striking member having a first length, a
3 first proximal end, a first distal end, and a first juncture section adjacent the first
4 proximal end, the first juncture section having an inner surface and a first juncture
5 section length that is less than thirty percent of the first length;
6 forming an elongate one-piece handle member of composite fiber-
7 reinforced material having a second length, a second proximal end, a second distal end
8 and a second juncture section adjacent the second distal end, the second juncture section
9 having an outer surface and a second juncture section length that is less than thirty
10 percent of the second length;
11 inserting the handle member into the first distal end of the striking
12 member; and
13 pulling the second proximal end of the handle member through the first
14 proximal end of the striking member until only the second juncture section of the
15 handle member is overlapped by the striking member, and at least a portion of the outer
16 surface of the second juncture section firmly and directly contacts at least a portion of
17 the inner surface of the first juncture section of the striking member.

1 123. (canceled) The method of claim 122, wherein, in the joining step,
2 adhesive is applied between the first and second juncture sections and cured, whereby
3 at least a second portion of the first juncture section is adhesively joined to at least a
4 second portion of the second juncture section.

1 124. (canceled) The method of claim 122, wherein the striking member is
2 formed of a material having a first specific gravity and the handle member is formed of
3 a composite material having a second specific gravity different from the first specific
4 gravity.

1 125. (canceled) The method of claim 122, wherein the second juncture
2 section of the handle member is formed in a configuration complementary to the first
3 juncture section of the striking member.

1 126. (canceled) The method of claim 122, wherein the step of forming the
2 handle member comprises positioning plural composite layers adjacent each other to
3 form a tubular member, and curing the layers.

1 127. (canceled) The method of claim 126, wherein the step of forming the
2 handle member comprises the steps of positioning plural composite layers containing
3 structural fibers therein adjacent each other such that each layer is tubular, and
4 orienting the layers such that the majority of the layers have fibers extending at an
5 angle less than about 50° relative to the longitudinal axis of the handle member.

1 128. (canceled) The method of claim 122, wherein at least one molding member
2 is impressed against one of the inner surface of the first juncture section and the outer
3 surface of the second juncture section during forming to produce spaced apart projections
4 on at least one of the first and second juncture sections.

1 129. (canceled) The method of claim 128, wherein the projections are formed
2 as elongate ribs extending substantially longitudinally along at least one of the first and
3 second juncture sections.

1 130. (canceled) The method of claim 129, wherein the ribs are positioned
2 such that at least a portion of the ribs provide the direct contact between the first and
3 second juncture sections.

1 131. (canceled) The method of claim 128, wherein the molding member
2 produces projections in a range of 0.002 to 0.005 inch in height.

1 132. (canceled) The method of claim 122, wherein the striking member is formed
2 from a material selected from the group consisting of a metal, wood, a fiber reinforced
3 composite material, and a non-metallic material.

1 133 (canceled) The method of claim 122, further comprising the step of
2 inserting a weighed plug into the proximal end of the handle member, and coupling the
3 weighted plug to the handle member.

1 134 (canceled) The method of claim 133, wherein the weighted plug weighs in
2 the range of 0.5 to 7 ounces and a length in the range of 1.0 to 4.0 inches.

1 135 (canceled) The method of claim 122, further comprising the step of
2 inserting a tubular insert within the striking member, such that when fully assembled the
3 tubular insert can move independently of the striking member upon impact with a ball.